



FOLIO

THE UNIVERSITY OF ALBERTA STAFF BULLETIN

EDMONTON, ALBERTA

APRIL 3, 1975

Universities in the Future of Alberta

The following address was delivered by President Harry Gunning at a recent meeting of the Canadian Club in Calgary.

Over the next decade, we will witness many profound changes in our society as we struggle to provide food and materials for an exponentially-increasing world population within the critical constraints of minimizing energy consumption and preserving the delicate eco-balance of our planet.

Consider the facts that in 1650 about half a billion people lived on this earth. By the 1880s this number had doubled. Conservative extrapolation would place world population in another 50 years, i.e. 2025, at 12 billion people. Under present land usage we require 0.4 hectares of arable land per person. One hectare is 10,000m² or 2,471 acres. By 2025, therefore, arable land needs would be 4.8 billion hectares—over 50 percent more than the available area of arable land on our planet.

I quote these data to illustrate the complexity of our decisions in the near future. Our current concerns with energy consumption and resource diplomacy in general could all have been predicted, and more intelligent decisions made, had we properly used the intellectual resources of our society.

To solve the problems which will fall upon us with ever-increasing frequency, what we now know will be as nothing compared to what we must discover. New methods based on new knowledge will be required to deal with the unforeseen and the unforeseeable. Now, before we can begin to acquire such new knowledge, we must thoroughly understand what is already known, including the highly-sophisticated techniques now needed to penetrate the unknown. Since such forefront research and the training of those who will carry it out are major roles of our universities, it is obvious that our universities must become increasingly involved in providing to our society the objective data and the fully-investigated options from which meaningful political decisions can be made.

A good case in point, very much in our minds at the present time, is the new Syncrude consortium involving major international oil companies, two provincial governments, and a

federal government. Who will determine the priorities in this new organization? And what should they be? Will the governmental partners merely act as a bank providing the funds to enable the oil companies to carry out their own internal objectives? Or will this unprecedented alliance among federal and provincial governments provide new directions for the Syncrude development, in which the tar sands will be exploited primarily for the benefit of Canada, with special emphasis on the major role that such a unique political alliance could play in unifying our country? These are not decisions that can be made effectively without fully utilizing the intellectual resources of our society.

For Alberta we will require far more than the capabilities within our government to deal intelligently with this staggeringly complex problem, I say that our universities with their wide range of specialized knowledge and insight must be fully involved in providing the input from which government policy can be evolved.

Personally, as a research chemist with a good deal of knowledge and experience in bitumen upgrading and as a director of the Hydrocarbon Research Centre at The University of Alberta, I am deeply concerned that the unique properties and reactivities of our bitumens be fully utilized in providing raw materials, not just for a synthetic crude but also for new industries which would more intensively exploit the talents of our citizens. What the Alberta government needs is a special policy advisory group which will bring together the best minds in the universities and in the community, and into this group will be fed new research findings of direct relevance in determining priorities for the Syncrude organization.

In my view the government-industry partnership exemplified by the new Syncrude consortium will become increasingly a way of life in this country. We can readily trace this development to the conflict between the needs of Canadian identity and the laws of economics. As a research consultant to the industry, I can recall many instances where excellent chemical processes were developed in Canada and subsequently, for reasons of economy of scale,

the actual production plants and the profits ended up in the United States. As a Canadian I, along with many others, found this an intolerable situation; but to make it happen in Canada, we have to compensate for economy of scale by increased participation—government participation. As a strong believer in the powerful motivating forces of the free enterprise system, I am naturally suspicious of government intervention in industry. I can see entrepreneurial incentive being crushed under the dead weight of government bureaucracy; but in my view this type of government-industry partnership is inevitable since industry alone can no longer cope with the complexities of our societal needs.

Consider the political situation within Canada itself. To maintain Canadian unity we can no longer allow industrial growth to be the humble servant of economics. If, to maximize profits, the free enterprise system requires that essentially all of our talented citizens concentrate in central Canada, then the fundamental drives for regional identity will modify, through political action, what amounts to an intolerable situation for most Canadians.

Albertans want the full spectrum of opportunities within this province so that each individual can realize his or her full creative potential. Certainly the federal government has done little to meet this basic need. As a member of the National Research Council of Canada, what I continually deplored was the lack of decentralization of federal government functions. Ottawa is jammed with federal research facilities which should have been distributed across this country from coast to coast. This one act would have done a great deal toward unifying this country by making the central government more aware of our regional needs.

In Alberta we are in the process of launching some major new social experiments, of which the Syncrude development is a fundamental example. We are attempting to break away from world-wide economic systems to satisfy our ego-drive as Albertans. This is a route which is fraught with many dangers, and we are going to require all of the knowledge and sophistication that we can muster not to fall flat on our provincial faces. I return

therefore to the basic theme of this talk: To be successful we must utilize all of our talents, and a major reservoir of this talent lies within our universities. Here we have taken great pains to attract highly creative minds who are at the forefront of their world-wide disciplines. These people must have input to the centres of decision-making. We are a small province in terms of population and, as a result, we must scramble to bring together what we need in human resources to tackle our problems. Let me cite an example. With the help of a well-organized and adequately funded research program, I am confident that we can develop methods for extracting from our bitumens the feed-stocks required for a major pharmaceutical industry in this province; but the development of this type of industry requires a whole spectrum of people to form the critical mass for entrepreneurial success. We need organic chemists, pharmacologists, clinical researchers, economists, patent attorneys and, above all, business managers who have had experience in this highly-specialized field of production of health care products. There is no other answer but for the universities to become increasingly involved with the government and the business community in making this type of enterprise come to pass.

At the beginning of this talk I pointed out that, to solve our problems, what we now know will be nothing compared with what we must discover; and for this province, our destiny will be determined to a major extent by our future commitment to research. Alberta has a golden opportunity to deploy its resources of talent in the direction of seizing the initiative in research, instead of depending solely on the federal government for such

support as it has done in the past. The federal support of research in recent years has been so inadequate that, in my view, it borders on national irresponsibility. If Alberta took the lead in this direction, all kinds of talented researchers would be attracted to this province and we would thereby build up our most valuable of all resources—our reservoir of human creativity.

Let me cite some problems. It is obvious that in the future food production will be one of the critical components of our survival. Human nutritional requirements will have to be increasingly met from plant sources. It takes five pounds of cereals to produce one pound of meat, and this type of food utilization will become a luxury in the future. In the United States some 80 percent of cereal production goes directly into animal feed for meat production. This is, nutritionally, an enormous waste since human needs can be much more efficiently met directly from legumes and cereals. In Alberta we should be launching major research programs designed to develop new types of cereals and legumes which could be efficiently grown in our climate and which have the required proteins and other components for human nutrition. Concomitant research also will have to be done on new fertilizers, plant growth stimulants, and pesticides which will increase plant production at a minimum of energy consumption and ecological damage.

Finally, let me deal with another area in which I feel it imperative that our universities play an increasingly important role. I refer to the realm of public policy. Today our citizens are called upon to vote on issues which are extraordinarily complex and on which little objective information is made available to them. Here I would like to see our universities take the lead in developing a public forum in which authorities in such issues could make available all of the ramifications of a given course of political action. At The University of Alberta we are moving toward setting up such an Institute for Public Policy where such policy problems can be thoroughly and objectively investigated, and ultimately the findings will be available to the public through print and video tape. In this way we hope to contribute constructively toward more intelligent political decisions in the realm of public policy.

Finally, in my view, we need what I will call an Innovation Centre where totally new ideas on the future of Alberta can be developed. I envision this as a university-funded organization, to ensure its apolitical nature, in which highly original minds would be invited to participate on a visiting basis and address themselves to new concepts particularly suitable for the development of this province. The results would be available to government and the

people and thereby provide exciting new options for the future growth of this wonderful province of ours.

AGRICULTURE POLICY STATEMENT ISSUED

Deans of Canada's 11 faculties and colleges of agriculture and veterinary medicine have issued a joint statement of long-range objectives, policies, and needs. Press conferences were held in each of the 11 centres to release the statement. At the Edmonton conference F.V. MacHardy, Dean of the Faculty of Agriculture and Forestry, said that the joint statement had been initiated by the Science Council of Canada. The Council made a study of the teaching and research facilities and found a lack of co-ordination between them. Eventually it brought together representatives of the 11 schools and asked them to determine their future needs and objectives. *A national statement by the faculties of agriculture and veterinary medicine at Canadian universities* was the result.

The *National statement* outlines three principal topics of concern to the 11 faculties: (1) "their functions in support of the farming and food industries, in the Canadian economy, and in Canadian society as a whole;" (2) "the obstacles to efficient performance or expansion of these functions to meet the demands and expectations of society;" and (3) "organizational changes that would help to overcome these obstacles."

The statement goes on to say that *"the faculties find themselves chronically under-financed* despite widespread government and public lip-service to the essential importance of food production and the need to apply education and research to its increase [italics in original]." The major effect of such under-financing, the report says, is that there are virtually no funds available for research; all money is given over to teaching. In addition, the uncertainty of future levels of financing makes efficient planning impossible, and co-ordination little more than an ad hoc arrangement.

Other excerpts from the report are printed below.

"The Deans wish to impress on all Canadians, and most particularly on the federal and provincial governments, the urgent need for rational reforms in the professional support system for agriculture in Canada. The faculties are an essential part of this support system and therefore must be involved in the planning and carrying out of such reforms.

"In the meantime, the 11 Deans of Agriculture and Veterinary Medicine have resolved to continue the consultation that

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brought them to this point, and to proceed with joint planning. . .

"The specific problems of science in agriculture have been presented to the federal government and the public in two publications of the Science Council of Canada: *Agricultural Science in Canada*, Background Study no. 10, 1970, and *Two Blades of Grass*, Report no. 12, 1971. These documents identified *lack of co-ordination of research*, particularly between the federal government and the universities, as a fundamental weakness of the whole system [*italics in original*]. . .

"Continued efficient food production and marketing is a critical factor in the future progress of the Canadian economy; and the regionally-organized character of the faculties places them in a strategic position to contribute effectively to the combined teaching, service and research needs of the entire agricultural community . . . The Agricultural and Veterinary faculties need and deserve increased support. The country cannot afford to waste either their research potential or their contribution to the national assessment of needs and priorities in agriculture."

METRIC TARGET DATES

The Canadian Standards Association has compiled the following list of target dates from Sector Committees operating within the Metric Commission. These dates are tentative and subject to change. They are only the beginning of what will soon be an avalanche of announcements on conversion times.

1. April 1975—Temperature reports to be given in Celsius only.
2. Fall 1975—Sugar to be packaged in metric sizes.
3. September 1975—Precipitation reports (rain in mm, snow in cm) to be given in SI.
4. Early 1976—Automobile speedometers and odometers to be marked in km, if necessary.
5. Summer 1976—The Olympics, to be held in Montreal, will be conducted in metrics.
6. January 1976—Newsprint and market pulp to be supplied in SI.
7. March 1976—Prepackaged fresh fruits and vegetables to be sold in SI.
8. January 1976—Metric scales in the retail trade will be introduced in three pilot conversion areas.
9. September 1976—Atmospheric pressure to be given in SI.
10. September 1976—The shoe industry to convert to SI.
11. January 1977—Scales to be converted to SI in the food industry; conversion ends December 1978.
12. February 1977—All grain sales to be conducted in SI.
13. April 1977—Visibility and wind speeds to be given in km/m and km/h, respectively.
14. May 1977—Textile orders to be booked in SI.
15. July 1977—Construction industry to be converted to SI.
16. September 1977—All road signs in Canada to be converted to SI.

The Stone Owl



CANADA GOES METRIC, BUT SLOWLY

When in 1714 Gabriel Daniel Fahrenheit used mercury instead of alcohol and introduced an improved thermometer and a new temperature scale, Anders Celsius was a 13-year-old boy already deep in his studies in Uppsala, Sweden. Celsius introduced his own scale only 28 years later, but that was 18 years too late for the English-speaking world. For in 1724 the German-born Fahrenheit communicated the results of his work to the Royal Society in London and the English adopted his scale with alacrity. What could be better than a scale with 180 points between freezing and boiling to go with a ton consisting of 20 hundredweights or 2,240 pounds, a mile consisting of 1,760 yards, and a pound consisting of 240 pence or 20 shillings? A scale starting at 32 and reaching to an unrelated 212 was eminently acceptable. Logical mainland Europeans might like everything neat and tidy, all in multiples of 10, but neither the English nor we, their legatees in the English-speaking Commonwealth, have ever been able to see the advantage of it. For over 200 years we have clung to our pounds and ounces, to our yards and miles, and to our Fahrenheit temperatures. Until this week, that is, when the unaware might have been depressed by radio weather forecasts of expected highs between 10° and 5° below zero. (The Celsius scale starts at 0° for freezing and runs to 100° at boiling point.)

Yes, Canada has at last gone Celsius, the first step in the long process of transition to a logical, sensible system of mensuration; and yet, a brief investigation has shown that we are in no danger of becoming sensible all at once. A comfortable amount of confusion still exists. Telephone calls to heating contractors revealed that no moves are afoot to install Celsius thermostats in new buildings and the Canadian Gas Association has no plans to introduce ranges bearing the Celsius temperature scale.

John Markovich of the Metric Commission explained why. The implementation of metrication is voluntary. From April 1 the Weather Office is giving out temperatures only in Celsius. The federal government hopes that radio stations will co-operate, as indeed most

seem to be doing, but it is optional. "If there is a demand for appliances with the Celsius scale, I expect manufacturers will start supplying them," Mr. Markovich said, "but it will be a slow process. Manufacturers are represented on the Metric Committees and it is hoped that they will take action on decisions made, but there is no compulsion." Meanwhile, we shall have to learn to live with the two scales for some time, Celsius for outdoor temperatures, Fahrenheit for indoor ones. In a democracy, the government can only lead; it cannot force. But eventually government contracts will only be awarded to those who have converted to the metric system which will give a big impetus to industry to change. For example, Mr. Markovich says that from now on all new federal government buildings will have Celsius thermostats.

The long way to convert Celsius to Fahrenheit is to multiply by 9, divide by 5, and add 32. To convert Fahrenheit to Celsius, subtract 32, multiply by 5, and divide by 9. A shorter way is to remember that 9° Fahrenheit equals 5° Celsius, so that starting with a base of 32 for F. and 0 for C., you add or subtract multiples of 5 and 9. Thirty-two plus 18 (2 nines) is 50° F.; 0 plus 10 (2 fives) is 10° C.; ergo, 10° C. equal 50° F. It is even simpler to remember that 27° C. is hot (80° F.); -18° C. is cold (0° F.); and that 21 or 22° C. (70° F.) is a comfortable room temperature. The changeover will have little effect on our University life, except in our conversations about the weather. Scientists will have a further reason for feeling superior to the rest of us in that they have always worked with Celsius. They won't have to stumble through multiplying and dividing by fives and nines before deciding whether to wear a top coat.

The conversion to Celsius is the first step towards Canada's adoption of the *Système Internationale d'Unités* (SI) which should be completed in 1978. SI has seven basic units: the metre (symbol m), the unit of length; the kilogram (kg), the unit of mass; the second (s), the unit of time; the ampere (A), the unit of electric current; the kelvin (K), the unit of thermodynamic temperature; the mole (mol), the unit of substance; and the candela (cd), the unit of light. Most of these units are only of concern to scientist and will not be used in everyday life. The litre, which is the metric unit of volume, will also be used, although in SI the litre is a special name for the cubic decimetre and is not used for high precision measurements.

Willard F. Reese, Professor of Elementary Education, spent his sabbatical in 1972-73 observing the process, progress, and problems in changing to the Metric-SI system in the United Kingdom. He is also the Western

Canadian representative to the National Association on Metric Education. His advice is "Don't fight it. Metrication is inevitable—so relax and enjoy it." To help people do just that he has invented a game called "Travel Metre." It is played on a board with a large map of Canada in the centre (with a kilometre scale) surrounded by squares bearing international road signs and game commands. The purpose of the game is a race between various points in Canada. Dice are thrown; the game pieces (each one cubic centimetre and weighing one gram) are moved around the board. The players take cards and do the metric activity described thereon, or answer questions regarding metric weights, measurements etc., or identify international road signs. Correct answers carry a bonus of kilometres travelled. The game, priced at \$10, will soon be in the stores and is already available from Dr. Reese, Department of Elementary Education, 432-5417. It certainly offers a painless way of learning the metric system, unless you play with children. They are immersed in metrics at school and have no difficulty in beating their elders unmercifully.

The target dates for Canada's conversion are given on page three, and if the whole business looks daunting I offer one last thought. Whether it's 80° F. or 27° C. it's hot; whether it's 0° F. or -18° C., it's cold. We can change the scale, but we're stuck with the weather.

—NG

LECTURE AND SYMPOSIUM ON CANCER CHEMOTHERAPY

A figure central to the development of drugs used in the treatment of cancer, Frank A. Schabel Jr., will be at the University Thursday and Friday, April 10 and 11.

Dr. Schabel is director of chemotherapy research at the Southern Research Institute in Birmingham, Alabama. One of Dr. Schabel's main research contributions has been in the development of experimental systems using rodent tumors to identify chemical compounds with potential anti-cancer activity.

Dr. Schabel will present the fifth annual Canadian Cancer Society lecture, "The present status and future promise of cancer chemotherapy," April 10 at 8 p.m. in the auditorium of the W.W. Cross Cancer Institute, 11560 University Avenue.

The following day he will conduct a research seminar on the current state of experimental cancer chemotherapy. The seminar will be held at 12 noon in 2-115 Clinical Sciences Building.

VISITORS

■ S. Chandrasekra, a population scientist and former Minister of Family Planning in the government of India, is visiting the Department of Sociology April 3 and 4. He will be presenting lectures on the populations of India and China. Further information may be obtained by calling the Population Research Laboratory, 432-4659.

■ Carvin G. Shirley, Department of Metallurgy and Materials Science, Carnegie-Mellon University, Pittsburgh, Pennsylvania, conducted a colloquium in the Department of Physics.

■ L. Small, University of California at La Jolla, conducted a colloquium in the Department of Mathematics.

■ Recent visitors who have conducted seminars in the Department of Pharmacology have been David McLennan, University of Toronto; Ernie Puil, University of Montreal; and Betty Sasyniuk, McGill University.

PEOPLE

■ J.J. Bergen and D. Friesen of the Department of Educational Administration have been invited to lead a week-long seminar in Frankfurt am Main and Saarbruecken, West Germany April 21 to 25. The themes they have been asked to discuss with German professors and school administrators are decentralization in education and the training of educational administrators.

■ M. Monod, Associate Professor of Secondary Education, acted as moderator for six panel discussions entitled "Forum" which were shown on Channel 11 during February and March.

■ Tom Atkinson and Lorne Stewart, Professors of Elementary Education, and Jim Bell, Professor of Secondary Education, conducted a workshop on the preparation of participants for the extended practicum at the annual conference of the Western Canadian Association for Student Teaching, in Regina.

Advisory Committee for the Selection of a Vice-President (Planning and Development) The University of Alberta

The Advisory Committee to the Board of Governors for the Selection of a Vice-President (Planning and Development) invites applications or nominations for this position. The successful applicant will assume the position January 1, 1976, or as soon as possible thereafter, by arrangement.

The Vice-President's major responsibilities include the planning and development of physical aspects of campus, both annually and in the long term; preparations of programs for renovations and alterations, land purchase and utilities; preparation and administration of the capital budget; and supervision of related projects. He serves as Chairman of the Campus Development Committee and as the University representative to the Board Building Committee. He provides liaison between Planning and Development and other bodies within the University.

Applicants should have knowledge of the university environment, ability to negotiate with provincial and municipal authorities, and suitable experience in administration within a larger organization.

The salary is negotiable.

Applications or nominations including a résumé, or further enquiries, should be sent to Mr. John Nicol, Secretary to the Board of Governors, Room 3-3, University Hall, The University of Alberta, Edmonton, Alberta.

The competition will remain open until a selection is made.

NOTICES

EXTENSION CERTIFICATE PROGRAMS

The Department of Extension will be offering four courses this spring which apply to three certificate programs: the Management Development program; the Personnel Administration program, and the Real Estate program.

The courses are: Business Organization and Administration; Business Communications; Canadian Economic Development; and Personnel Administration. Each course will run Mondays and Thursdays from 7 to 10 p.m. beginning May 1 and running through June 26. The fee per course is \$150 and includes textbooks and materials. The registration deadline is April 22.

Students requiring complete information on the certificate programs should call the Department of Extension, Corbett Hall, 82 Avenue and 112 Street; 432-3027 or 432-5545.

ASSOCIATION TO HOLD ANNUAL MEETING IN RED DEER

The Alberta Association on Family Relations will be holding its annual meeting May 10 at Red Deer College.

The Association will meet for the whole day, which will be given over to discussions, speakers, and a film, as well as to the business meeting and election of officers.

Among the speakers will be Sharon Abu-Laban of the Department of Sociology and Madan Paul of the School of Household Economics.

Registrations are being accepted; the fee is \$8 which includes coffee and lunch. As the meeting will begin at 9 a.m., some may wish to travel to Red Deer the previous evening, in which case they should make room reservations at the Capri Motel.

Further information and registration forms are available from Dianne Kieren, School of Household Economics, 432-5766.

VICTORIAN SYMPOSIUM TO BE HELD AT GUELPH

The University of Guelph in co-operation with the "Canadian Antiques Collector" are sponsoring a symposium entitled "Canada in the Victorian image" June 3 to 7.

The program will include: "The Victorian experience from Coronation to Jubilee" by Asa Briggs, Vice-Chancellor of Sussex University; "Victorian architecture in England" by John Betjeman, Poet Laureate of England; "Victorian architecture in Canada" by Douglas Richards, University of Toronto; "Victorian furniture and interior decoration" by Sir Hugh Casson, Royal College of Art, England;

"Victorian painting in Canada" by Joan Murray, author and Director of the McLaughlin Art Gallery, Oshawa; "Fashions and textiles" by Katharine B. Brett, Curator, Textile Department, Royal Ontario Museum; and "Preserving Victorian Canada" by Peter Stokes, author and architect. There will be bus trips to various Victorian points of interest and a Victorian picnic.

Those interested in finding out more about this unique occasion should write to Mrs. V.L. Gray, Administrative Assistant, Office of Continuing Education, University of Guelph, Guelph, Ontario.

AMERICAN ENERGY SPECIALIST TO VISIT

D.J. Rose, a distinguished scientist and consultant on energy and the environment in the United States, is to visit The University of Alberta April 7 and 8. He is Professor of Nuclear Engineering at the Massachusetts Institute of Technology with a well-known background in thermonuclear fusion research. In the past six years, however, Dr. Rose has concentrated on general energy and environmental concerns, serving as a consultant to both the Environmental Protection Agency and its formation states and the Energy Research Development Agency. He has, in addition, served on numerous scientific committees and acted as a consultant to many large private companies in the United States.

Dr. Rose will be conducting a seminar on Tuesday, April 8 (see "This Week and Next" for details) and all interested persons are invited to attend. Those who might wish to know more about Dr. Rose's visit should call A. Offenberger, Department of Electrical Engineering, 432-4097.

SPRING SESSION ARTS AND CRAFTS

The Students' Union Arts and Crafts Centre will be offering courses in the following, beginning May 4: beginning ceramics; intermediate ceramics; floor loom, table loom, and off-loom weaving; macramé; copper enamelling; batik; screen printing; basic art and design; and primitive weaving and spinning.

Registrations will be accepted April 7 to May 2 between 3:30 and 6:30 p.m. in the Students' Union Craft Shop in the east hallway, main floor of the Students' Union Building. Registrations will also be accepted by mail.

SPRING EXHIBITION AND SALE OF ARTS AND CRAFTS

The Students' Union Arts and Crafts Centre will be holding its annual exhibition and sale April 14 to 20 in the Students' Union Building art gallery. The exhibition and sale will be held between 2 and 8 p.m. Monday through Friday and between 2 and 6 p.m. on Saturday and

Sunday. On sale will be student- and professionally-made ceramics, batiks, weavings, macramé, copper enamelling, and jewellery.

WOMEN'S PROGRAM CENTRE WANTS NEW MEMBERS

The Women's Program Centre is seeking new members for the 1975-76 school year. Women interested in organizing and planning programs for the coming year are invited to attend a meeting on Monday, April 7 at 7:30 p.m. in the SUB Meditation Room.

Many of the women currently running the office in SUB will be leaving in May, so it is imperative that new people should come forward if the office is to be kept open. The services provided by the Centre are birth control and abortion referral; maintenance of correspondence with other women's groups in the city and western Canada, and the maintenance of a lending library of feminist writings.

Further information may be obtained from Karen Rowsell, 433-1103, evenings.

THIS WEEK AND NEXT

Listings must reach the Editor by 9 a.m. the Friday prior to publication. Written notification is preferred. Compiled by Norma Gutteridge, 432-4991.

3 APRIL, THURSDAY

Graduate Students of English Association

4 and 6:30 p.m. *Sawdust and Tinsel* directed by Ingmar Bergman with Harriet Anderson (1953). LT-1 Audiovisual Centre, Humanities Centre, Admission \$1.

French Film Series

7:30 p.m. *La Cousine Bette*, directed by Yves-Andres Hubert. 013 Collège Universitaire Saint-Jean, 8406 91 Street. Admission free.

Concert

8 p.m. Fourth in series of concerts sponsored by the Edmonton Art Gallery, this one presented by a trio of oboe, recorder, and harpischord in a concert of baroque music including pieces by Telemann and Vivaldi. Edmonton Art Gallery, Sir Winston Churchill Square. Admission free.

4 APRIL, FRIDAY

Recital

5 p.m. Pianist Frank Pellizzari will present his junior recital. Convocation Hall. Admission free.

Seminar Series

'Our Changing Climate'

8 p.m. "The lessons of climatic history" by

Reid A. Bryson, Professor of Meteorology and Geography and Director of the Institute for Environmental Studies, University of Wisconsin at Madison. Sponsored by the Institute of Earth and Planetary Physics. TLB-2, Henry Marshall Tory Building.

Edmonton Symphony Society

And 5 April, Saturday. 8:30 p.m. Promenade Concert of Viennese music with Mary Costa. Sponsored by Du Maurier. Jubilee Auditorium. Tickets from the Symphony Box Office, 433-2020.

The Alberta Contemporary Dance Theatre

And 5 and 6 April. 8:30 p.m. Annual spring concert. The draw for an Air Canada Trip for two—"Ticket to anywhere in Air Canada's world"—will be made after the second intermission on Friday, April 4. Students' Union Theatre. Admission \$3.

6 APRIL, SUNDAY

Television Program

'In Touch with U'

And every Sunday. 5 p.m. A program to introduce the University to the community at large. CITV channel 13, cable 8.

7 APRIL, MONDAY

World Adventure Tours

6 and 9 p.m. *Hungary*, with M. and S. Mentec. Jubilee Auditorium. Tickets from the Bay Box Office, 424-0121.

folio accepts display advertising

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Other specifications: half-tones (100-line screen or less) are acceptable; no color or bleeds can be accepted. Deadline for submission of all copy is one week prior to publication (Thursday, 4 p.m.); positioning is at the discretion of the editor.

Contact: David C. Norwood, 325 Assiniboia Hall, The University of Alberta; telephone 432-4991.

8 APRIL, TUESDAY

Seminar

11:30 a.m. Dr. Yusuf Dadoo, Vice-Chairman of the Revolutionary Committee of the African National Congress, and Mr. John Gaetsewe, the European representative for the South African Congress of Trade Unions. 10-4 Tory Building.

Public Seminar

3:30 p.m. "A review of U.S. energy policy" by D.J. Rose, Professor of Nuclear Engineering, Massachusetts Institute of Technology. Sponsored by the Faculty of Engineering. 2-3 Mechanical Engineering Building.

Edmonton Women's Place

Library Workshops

8 p.m. "Women in the labor force." An exposé of women at work throughout Alberta. Music Room, Centennial Library.

Concert

And 9 April, Wednesday. 9 p.m. Murray McLauchlan in concert at the Students' Union Theatre. Tickets at SUB Information Desk, the Bay Box Office, and at the door.

9 APRIL, WEDNESDAY

Edmonton Overture Concerts

8:15 p.m. The Munich Boys' Choir. Jubilee Auditorium. Tickets from the Bay Box Office, 424-0121.

10 APRIL, THURSDAY

French Film Series

7:30 p.m. Last film in the series: *Juliette Ou La Clef Des Songes*, directed by Marcel Carne, (1951). 013 Collège Universitaire Saint-Jean, 8406 91 Street. Admission free.

Cancer Society Lecture

8 p.m. "The present status and future promise of cancer chemotherapy" by Frank A. Schabel Jr., director of chemotherapy research at the Southern Research Institute, Birmingham, Alabama. Sponsored by the Alberta Division, Canadian Cancer Society. W.W. Cross Cancer Institute auditorium, 11560 University Avenue.

11 APRIL, FRIDAY

'A Night of Music'

7:30 p.m. Presented by the Edmonton Public School Board. Jubilee Auditorium. Tickets from the McCauley Plaze Box Office, 422-4411.

Recital

8 p.m. Last in the series of recitals of the Violin and Piano Sonatas of Beethoven played by Lawrence Fisher, violin; Helmut Brauss, piano. Sonata op. 12, no. 1 in D Major; Sonata

op. 23 in A Minor; Sonata op. 96 in G Major. Convocation Hall. Admission free.

12 APRIL, SATURDAY

Edmonton Symphony

8:30 p.m. *And 13 April, Sunday at 2:30 p.m.* Guest artist: James Keene, violinist. Symphony no. 34, Mozart; Violin Concerto no. 2, Prokofiev; Ballet Music from "The Creatures of Prometheus," Beethoven. Jubilee Auditorium.

EXHIBITIONS AND PLAYS

University Art Gallery and Museum

Until 2 April. Exhibition by students of print-making and sculpture. Hours: 11 a.m. to 4 p.m. weekdays.

Edmonton Art Gallery

Until 6 April. Annual exhibition by the Edmonton Art Club.

Until 18 April. Paintings by Calgary artist Bruce O'Neil.

Until 21 April. "Recent accessions: paintings and sculpture," and "Kenneth Noland: paintings."

Until 4 May. "Tilt: pinball machines 1931-1958." Learn the finer points of flipper control and gunging; see the difference between mushroom bumpers and thumper bumpers; watch out for that ominous "tilt," when the Dunlop Gallery's exhibition comes to Edmonton.

Latitude 53 Gallery

Until 3 April. Works on paper and sculpture by Hendrick Bres and Tommie Gallie. 10048 101A Avenue. Hours: 12 to 5 p.m. Tuesday to Saturday; 7 to 9 p.m. Thursday evening.

Provincial Museum

Until 30 April. "The legacy: contemporary British Columbia Indian art," featuring works by native artists in the traditions of the Kwakiutl, Haida, Tsimshian, Nootka, and Salish peoples. This is the first stop on a national tour. 12845 102 Avenue, feature gallery number 3.

Studio Theatre

Until 5 April. Curtain times: 8:30 and Saturday matinee at 2:30 p.m. *Hotel Paradiso* by Georges Feydeau and Maurice Desvallieres. Studio Theatre, Corbett Hall. Tickets from the Department of Drama, 3-146 Fine Arts Centre, or at the door.

Citadel Theatre

Until 19 April. Curtain times: 8:30 p.m. and Saturday matinee at 2:30 p.m. *Forever Yours, Marie Lou* by Michel Tremblay, starring Frances Hyland. 10026 102 Street. For tickets call the Box Office, 424-2828.

Citadel II

Until 12 April. David Freeman's *The Battering Ram* nightly at 8 p.m. Upstairs at 10018 102 Street. Admission \$3, students \$2.

Department of Extension

- 12 April, Saturday; 13 April, Sunday. 11 a.m. to 4 p.m. Exhibition of work by Extension students in printmaking, photography, drawing, painting, design, and ceramics. The Gallery Room, Corbett Hall.

GRANTING AGENCIES: APPLICATION DEADLINES

This list of deadline dates for submissions to granting agencies for research funds, exchange programs, and travel grants is published every month in *Folio*. In order to allow sufficient time for processing, all applications should reach the Research Grants and Contracts Office at least 10 days before the deadline date. Where other University resources are involved, the time requirement may be much longer than 10 days and such applications should therefore be submitted well in advance. An extra copy of the application should be provided for the Research Grants and Contracts Office.

- Further information may be obtained by consulting the *Calendar of Granting Agencies for Research Funds, Exchange Programs, and Travel Grants*, which is available in the offices of Deans, Directors of Institutes, Centres, and Schools, and Department Chairmen, or by phoning the Research Grants and Contracts Office, 432-5360. Code: (R) Research funds; (E) Exchange programs; (T) Travel grants.

Calendar source no.	Code	Granting agency	Deadline date
(3)	(R)	Atomic Energy Control Board	May 1
		new applications	Nov 15
(55)	(R)	Canada Council	May 1
		renewal applications	Aug 1
			Nov 1
			Feb 1
(420)	(R)	U.S. Department of Health, Education and Welfare	May 1
		renewal applications only	Sept 1
			Jan 1
		New and supplemental applications	June 1
			Oct 1
			Feb 1

GRANTING AGENCIES WITHOUT DEADLINES

The following granting agencies will accept research proposals or applications at any time. (This list should be retained for further reference.)

- All research proposals or applications should be forwarded, after being signed by the Research Director or the Chairman of the Department, and receiving the approval of the Dean of the Faculty where required, to the Research Grants and Contracts Office for registration and review. An extra copy of the application should be provided for the Research Grants and Contracts Office. Further information may

be obtained by consulting the *Calendar of Granting Agencies for Research Funds, Exchange Programs, and Travel Grants*, which is available in the offices of Deans, Directors of Institutes, Centres, and Schools, and Department Chairmen, or by phoning the Research Grants and Contracts Office, 432-5360. Code: (R) Research funds (E) Exchange programs; (T) Travel grants.

Calendar source no.	Code	Granting agency
(5)	(R)	The Advanced Research Project Agency—USAF/AFSC Liaison Office
(70)	(R)	Canadian Council on Urban and Regional Research
(95)	(R)	Central Mortgage and Housing Corp.
(140)	(R)	Department of Industry, Trade and Commerce
(150)	(R)	Department of Manpower and Immigration
(160)	(R)	Department of the Solicitor General
(165)	(R)	Donner Canadian Foundation
(245)	(R)	Licensed Beverage Industries Inc.
(257)	(R)	Medical Services Research Foundation of Alberta
(270)	(R)	National Aeronautics and Space Administration
(275)	(T)	National Cancer Institute of Canada (Travel grants only)
(315)	(R)	National Science Foundation
(370)	(R)	Research Corporation of New York
(410)	(R)	U.S. Air Force Office of Scientific Research
(415)	(R)	U.S. Department of the Army
(425)	(R)	U.S. Department of the Navy
(435)	(R)	Alexander von Humboldt Foundation
(445)	(T)	Wellcome Trust
(450)	(R)	World Health Organization

POSITIONS VACANT

ACADEMIC POSITIONS

Administrative Officer

Department of Economics

Duties: include administrative organization; personnel administration; budget preparation; preparation of statistical reports; supervision of registration procedures and student record processing; organization and co-ordination of timetable preparation and calendar submission; co-ordination of graduate student admissions and programming procedures; and secretarial duties for principal departmental committees. **Qualifications:** candidates should have a proven record of administrative ability. Effective communication both written and oral is an important requirement. **Salary:** to a maximum of \$13,700. Interested applicants should apply by submitting comprehensive résumés as soon as possible to B.W. Wilkinson, Chairman, Department of Economics, The University of Alberta. The appointment will take effect May 1, 1975.

NON-ACADEMIC STAFF

To obtain further information on the following positions, please contact Personnel Services and Staff Relations, 121 Administration Building, telephone 432-5201. Please do not contact the department directly.

File Clerk (\$467-\$576)—Office of the Registrar
Clerk Typist II (\$505-\$627)—Physical Plant; Office of Administrative Systems; Office of the Registrar; Household Economics
Clerk Typist II (term) (\$505-\$627)—Personnel Services and Staff Relations

Clerk Steno II (half-time) (\$263-\$326)—Cancer Research Unit
Clerk Steno II (\$527-\$653)—Extension
Clerk Steno III (\$599-\$744)—Mineral Engineering; Chemistry; Educational Psychology
Medical Steno (\$653-\$814)—Medicine; Ophthalmology
Secretary (\$683-\$853)—Botany; Office of the Registrar
Accounts Clerk II (\$653-\$814)—Office of the Comptroller
Accounts Clerk III (\$814-\$1,020)—Office of the Comptroller
Student Records Processing Clerk (\$627-\$779)—Office of the Registrar; Faculty of Education
Dental Assistants (trust) (\$551-\$683)—Dentistry
Biochemistry Technician (half-time) (\$300-\$400)—Surgery
Chemical Technician I (\$713-\$891)—Chemical Engineering
Microbiology Technologist (trust) (open)—Microbiology
Assistant Analyst (\$1,020-\$1,283)—Computing Services
Biological Modelling Analyst (\$850-\$1,000)—Botany
Biochemistry Technologist I (trust) (\$750)—Paediatrics
Histology Technician I (\$744-\$932)—Pharmacology
Applications Analyst (\$932-\$1,171)—Chemistry
Computer Operator I (\$744-\$932)—Educational Research
Technical Assistant (\$627-\$779)—Technical Services
Electronics Technician IV (Assistant Supervisor) (\$1,118-\$1,406)—Technical Services
Accounting Supervisor (\$1,020-\$1,283)—Office of the Comptroller
Biochemical Technician II (\$814-\$1,020)—Physiology
Laboratory Technologist I (\$779-\$975)—Provincial Laboratory
Technician III (\$932-\$1,171)—Mineral Engineering

The following is a list of currently available positions in the University Libraries. The bulletin board postings in the Library Personnel Office, 516 Cameron Library should be consulted for further information as to position requirements and availability.

Library Clerk III (\$576-\$713)—Cataloguing
Senior Key punch Operator (\$653-\$814)—Systems

The Edmonton Hebrew School

wishes to announce that
advance registration for the
academic year 1975-76 will take
place on Sunday, April 27 at the
school, 13212 106 Avenue.

The school offers a regular
day-school program in
English, Hebrew, and French
at the Preschool and Elementary levels
with continuing Hebrew
at higher levels.

PERSONAL NOTICES

All advertisements must be received by 9 a.m. the Friday prior to publication. Rate is 10 cents per word for the first week, and 5 cents per word for subsequent weeks ordered before the next deadline. Minimum charge is \$1. Ads must be paid in advance. We regret that no ads can be taken over the telephone. For order forms or further information, telephone 432-4991.

Accommodation wanted

- Wanted to sublet—by summer session instructor: furnished apartment near campus—Newton, Franklin, Garneau. Mrs. Kathleen Pratt, 402 2 Avenue SE, Medicine Hat; call collect (403) 526-3536.
- Wanted for August 1975—Unfurnished house to rent, University area, for University professor and family with two children, returning from sabbatical leave. J.E. Bennetts, 67 Ashby Road, Kegworth, Derby, England DE7 2DJ.
- Wanted—by summer, retirement-type home, large living room. University area. Pat Anderson, Royal Trust, 435-4869, 434-4460.
- Wanted—Family homes in Aspen Gardens for two professional clients. Please contact Pat Anderson, Royal Trust, for confidential evaluation. 435-4869, 434-4460.
- Thinking of selling your home? Today's real estate market fluctuates. Make sure you receive top value. Call a professional. Call Ross Lizotte, Buxton Real Estate Ltd. 436-1140, 426-5880 extension 990.
- Wanted—Postdoctoral Dental student and family desire furnished three-bedroom house, July 30 to June 30, 1976. Telephone 488-4629 after 6 p.m.
- Wanted—Responsible graduate students seeking furnished or unfurnished accommodation summer 1975 through summer 1976. Please telephone Bill, 432-4508.
- Wanted—Imperial Oil employee currently renting house from University professor on sabbatical until July 31 desires 3- or 4-bedroom house in Brander Gardens area from about August 1 to December 31. Please contact Dr. L. Barnstone, 436-5485.

University professor wishes to rent house or large apartment June 29-August 12. Write: Dr. P. Bernard, PO Box 100, Bromont, Quebec; telephone (514) 534-2207.

Wanted—Sessional Lecturer and family with two children need a house to rent starting July 1975. 436-0226.

Wanted—I have buyers for the following homes on the south side: 2-bedroom with basement suite; 3-bedroom bungalow or semi with or without suite. If you would like to know what yours will bring on today's market call Mrs. Ruth Low, 436-4240 or 439-0830.

Wanted—Reliable retired couple will care for your home from May 1 to September 31. Reasonable rent. Excellent references. 452-1621.

Accommodation available

- To sublet—2-bedroom, Michener Park, May 1-August 15 or portion thereof. 435-9456 between 5-6 p.m.
- For rent—three-bedroom bungalow in Aspen Gardens from July 1, 1975 to July 1976. Unfurnished or furnished; on direct busline to University. Approximately \$400. 434-2758.
- For rent—three-bedroom home, August 1, 1975-July 31, 1976; furnished, large treed lot, greenhouse. 434-8310 after 6 p.m.
- For rent—from July 1, 1975 to June 30, 1976, furnished 3-bedroom house, double garage, near Bonnie Doon-Collège St. Jean. Telephone 469-8150.
- Wanted—Couple to live with owner on farm, modern cedar house, 30 miles west, commuting distance, at least August-December 1975. Minor chores. 432-3414, 1-963-3238.
- For rent—July 1, 1975 to August 1976 in Valleyview: furnished four-bedroom house. Telephone 488-1408.
- For rent—July 75/76, 2-bedroom house in Glenora district. Ideal for couple. Furnished or unfurnished. Terms negotiable. No pets. Telephone 452-2147 evenings.
- For rent—June 28-July 31, four-bedroom house. 435-4541.
- For rent—Belgravia, 4-bedroom house, furnished, fireplace, garage. 436-0149.
- Room for rent—on campus; furnished; mature gentleman. 439-1542 evenings.

To sublet—Nice one-bedroom apartment, furnished, edge campus. \$80/month. Mid-April/end August. 433-3485 evenings after March 30.

Automobiles and accessories

For sale—1968 Epic, low mileage, excellent engine and body. 439-7473.

Goods and services

- Wanted—obsolete Canadian and foreign paper currency (accumulations, collections, rarities). 433-7623.
- Keele graduates are invited to phone 433-1488, 439-2708 evenings. Hso-Khan-Pha.
- Persian rugs—Royal Kirman 7' x 10', two Bohkaras 5' x 3'. 432-5812, 433-0459.
- Hauling—light duty; evenings, weekends. 475-3504 evenings.
- For sale—1970 Honda 350; 9,000 miles, good condition; \$550 or best offer. Phone Elaine, 432-5234 or 466-1578 after 6.
- Plumbing—For free estimates on basement bathrooms, repairs, alterations etc. call 465-7079 anytime.
- HUB Beauty Salon—telephone 433-0240. Winner in award. \$40 perms now \$25. HUB mall.
- Travel agency—Edmonton's oldest agency has a branch in HUB to serve you. We are accredited agents for all airlines, so there is no charge for our service. Domestic or international. Try your own personal agency. Holiday Travel, HUB mall, telephone 433-2494.
- Custom dressmaking and designing; telephone Jacqueline, 433-4870.
- Wanted—player piano. 433-0639.
- Repair of stoves, washers and dryers, electric or gas. Plus hookups. Telephone Bill at 455-3746.
- Must sell—double bed, chesterfield, chair, oak desk, fridge, electric stove, dresser, lawn chairs, coffee table, garden hoses, sewing machine, guitar, ironing board, 20" color TV, 16' canoe, TV tables, hair dryer, miscellaneous household items. 462-0639, 432-1125.
- Dressmaking—by experienced seamstress. Telephone 422-7308.
- Belgravia Co-operative Nursery—now registering all 3- and 4-year-olds for next fall. Call Ruth Craig, 436-1417.

Kampus Kobbler

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